

291

4.5  
HWp186 15-19<sup>odd</sup>, 27-30, 39

$$15. \begin{vmatrix} 10 & 6 \\ 5 & 5 \end{vmatrix} = 50 - 30 = \boxed{20}$$

$$17. \begin{vmatrix} -7 & 3 \\ -9 & 7 \end{vmatrix} = -49 - (-27) = \boxed{-22}$$

$$19. \begin{vmatrix} 2 & -7 \\ -5 & 3 \end{vmatrix} = \boxed{-29}$$

$$27. \begin{vmatrix} 3 & 12 \\ 0 & 64 \\ 2 & 51 \end{vmatrix}$$

$$-0 \begin{vmatrix} 32 \\ 21 \end{vmatrix} - 4 \begin{vmatrix} 31 \\ 25 \end{vmatrix}$$

$$28. \begin{vmatrix} 7 & 3 & -4 \\ -2 & 9 & 6 \\ 0 & 0 & 0 \end{vmatrix} = \boxed{0}$$

$$-6 - 52 = \boxed{-58}$$

$$29. \begin{vmatrix} -2 & 7 & -2 \\ 4 & 5 & 2 \\ 1 & 0 & -1 \end{vmatrix}$$

$$+1 \begin{vmatrix} 7 & -2 \\ 5 & 2 \end{vmatrix} + -1 \begin{vmatrix} -2 & 7 \\ 4 & 5 \end{vmatrix}$$

$$+24 + 38 = \boxed{62}$$

$$30. \begin{vmatrix} -3 & 0 & 6 \\ 6 & 5 & -2 \\ 1 & 4 & 2 \end{vmatrix}$$

$$+5 \begin{vmatrix} -3 & 6 \\ 1 & 2 \end{vmatrix} - 4 \begin{vmatrix} -3 & 6 \\ 6 & -2 \end{vmatrix} = -60 + 120 = \boxed{60}$$

$$39. \begin{vmatrix} 2 & x \\ 5 & -3 \end{vmatrix} = 24$$

$$-6 - 5x = 24$$

$$-5x = 30$$

$$x = -6$$

$$40. \begin{vmatrix} 4 & x & -2 \\ -x & -1 & 1 \end{vmatrix} = -3$$

$$-4$$

$$\begin{vmatrix} 4 & x & -2 \\ -x & -1 & 1 \end{vmatrix} = -4 - (-x - 2) = -4 + x + 2 = x - 2$$

$$-4 + x + 2 = -3 \Rightarrow x - 2 = -3 \Rightarrow x = -1$$

$$-4 + (-1) + 2 = -3 \Rightarrow -3 = -3$$

$$-4 + (-1) + 2 = -3 \Rightarrow -3 = -3$$